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The 'Brain Gym' Approach: Testing a Community-based Brain Training Model for Older Adults

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Background

The Sheridan Elder Research Centre (SERC) designs, tests and implements innovative solutions that improve the day-to-day lives of older adults and their families

Posit Science Co. and their Canadian partner DynamicBrain Inc. develop and distribute scientifically tested[1] computer-based, personalized brain training products.

Funded by NSERC's CCI Grant Program, SERC and DynamicBrain Inc. conducted a pilot study to test the effectiveness of a community-based brain training approach (the 'brain gym' model).

Research Questions

1. Does a community-based brain training model motivate older adults to engage in regular brain training?

2. Are there measurable cognitive and/or daily living benefits of community-based brain training?

3. Is the 'brain gym' model an effective means of increasing accessibility to brain training opportunities?

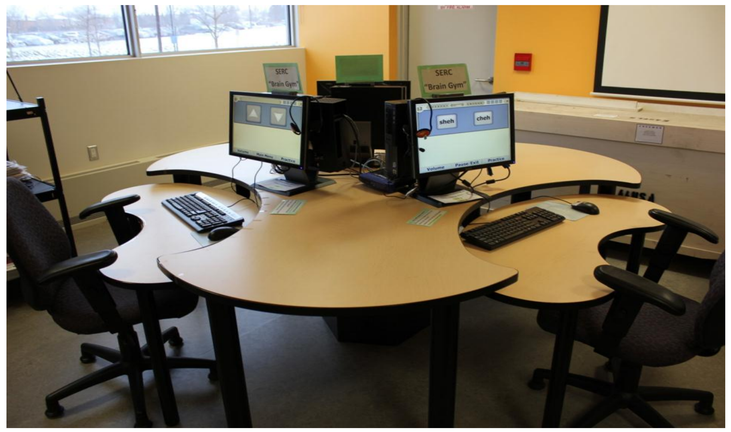
4. Can brain training be incorporated into standard community-based programming for older adults?

Participants

Demographic Data (n=11)
•11 older adults (OAs) aged 68-78 (mean age 72.2). 9 female, 2 male
•Mean level of education = college diploma
•Cognitively healthy, independently functioning individuals (4 reported cognitive health conditions)
•All engaged in some form of regular physical activity and had several hobbies
•2 had previous experience with computerized brain training programs

The 'brain gym' Model

The 'brain gym' is a community space where individuals can access brain training equipment (computers and *The Brain Fitness Program* from Posit Science) for regular, personalized brain exercise.



Four community locations hosted a 'brain gym'. (Research Centre, Seniors Centre, Retirement Residence, Public Library). Participants each completed 40 hours of brain training (1 hr/day, 5 days/wk)

Results

Pre and post-training measures of cognition (RAVLT, TMT), activities of daily living (ALSAR) as well as self-report (CSRQ) and feedback data were collected.

Cognitive Data (n=11)	Self Report Data (n=11)
•Slight but non-significant improvements in memory and attention •Rey Auditory and Verbal Learning Test (RAVLT): Mean learning gain = 10 words •Trial Making Test (TMT): Mean RT gain = 13 seconds	9 OAs reported perceived changes after training including: •Increased awareness/alertness •Improved memory in daily activities •More purposeful use of specific memory strategies •Improved concentration and attention •Improved listening skills •Increased enjoyment of challenging tasks/commitment to task completion •New learning/interests/lifestyle choices

Model Feedback Data (n=11)
•7 OAs liked the computer program
•7 liked the location of their 'brain gym' and said they would return
•9 felt it was easy to incorporate brain training into their daily schedule
•10 felt motivated to continue some form of brain training
•2 commented on the added benefit of socialization and peer support at the 'brain gym'

Conclusions

1.) **Attending the 'brain gym' left many participants interested in cognitive fitness, and motivated to continue seeking out brain training opportunities.**

2.) **Previous research has documented improvements on generalized measures of memory and attention after training with this program[1]. We were not able to demonstrate similar quantitative results, however our self-report data speak to such changes.**

3.) **We successfully implemented the 'brain gym' model at a variety of community sites and engaged a diverse group of older adults. We are translating our learning into an implementation manual to help community groups integrate brain training opportunities into their programming.**

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